Fermilab Today

Thursday, July 8, 2004

Calendar

Thursday, July 8

2:30 p.m. Theoretical Physics Seminar - Curia II

Speaker: W. Lee, Seoul National University

Title: Calculating e`/e Using Staggered Fermions

3:30 p.m. DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over

4:00 p.m. Accelerator Physics and Technology Seminar - 1 West

Speaker: J. Weisend, Stanford Linear Accelerator Center

Title: A History of TESLA Cryomodule Design and Operation

Friday, July 9

3:30 p.m. DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over

THERE WILL BE NO JOINT EXPERIMENTAL THEORETICAL PHYSICS SEMINAR THIS WEEK

Wilson Hall Cafe

Thursday, July 8

Tomato Florentine soup

Grilled Chicken Cordon Bleu Sandwich $4.75

Chimichangas $3.75

Chicken Marsala $3.75

Maryland Crab Salad $4.75

Italian Sausage Calzones $2.75

SW Chicken Salad with Roasted Corn Salsa $4.75

Wilson Hall Cafe Menu

Chez Leon

Weather

New Peak Luminosity Record

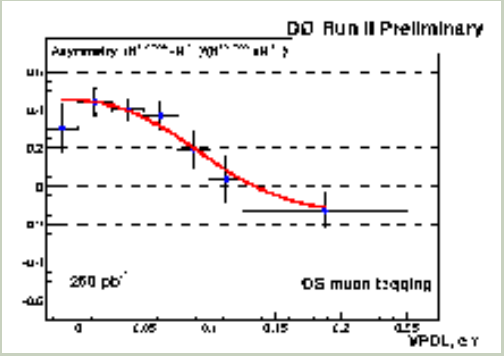
At 11:30 p.m. on Tuesday, the Tevatron hit a new peak luminosity of 9.2 E31. The Tevatron achieved the last record of 8.5 E31 on June 21. Congratulations!

Revisions in Performance Review Process

From December to April the Lab Services Section asked employees and supervisors for feedback on the 2002-03 performance review process. LSS managers received comments from hundreds of employees and supervisors through focus groups, phone calls and one-on-one conversations. More than 200 employees took the time to fill in and submit a feedback form. "Employees and department heads surprisingly had the same views," said Kay Van Vreede, head of LSS. "People were positive about the goal-setting procedure that we introduced. Most employees felt they now play a more active role in the review process and that they communicate more with their supervisors about expectations and accomplishments. Both employees and supervisors also made similar suggestions for improvements. The forced-averaging system was the area of greatest dissatisfaction."

Fermilab Result of the Week

Matter Oscillating into Anti-Matter and Back Again



The normalized difference between the number of mixed and unmixed B mesons as a function of time. If there was no mixing, all points would fall on a straight line. The B mesons are reconstructed using their decay products: a muon and a D* meson. DZero tags the flavor of B meson (i.e. determine if it was B or anti-B) at production by looking at the sign of decay muon from the second B meson present in the event. (Click on image for larger version.)

One amazing property of the neutral B_d meson, consisting of a b-quark and d-antiquark, is that it can spontaneously become (or oscillate into) its own anti-particle, i.e., become an anti-meson which contains a b-antiquark and a d-quark, and back again. This phenomenon was first observed in the 80's, and everyone was surprised by the large probability of oscillation. In fact, this large value implied that the top quark would have to be very heavy which was confirmed by the 1995 discovery of the top quark at Fermilab with a mass of about 180 times that of a proton.

Such oscillations are characterized by a frequency called Delta M_d, which has been measured by experiments operating at different accelerators

around the world, including DZero. Our

Partly Cloudy **77°/60°**

Extended Forecast

Weather at Fermilab

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This week a letter from Director Mike Witherell will go out to all employees with a summary of the feedback received. The letter also outlines revisions, such as replacing the number rating system with descriptive words. The letter describes these and other changes.

The revisions apply to the 2003-04 performance evaluation and the goal-setting for the 2004-05 review period. Here are some of the steps to be taken by employees and supervisors in the next several months:

- Within the next 2 weeks: employees write accomplishment reports and submit them to their supervisors.
- Before the end of July: supervisors write performance reviews and submit overall performance ratings.
- By August 1: supervisors and employees begin goal discussions for the new review period.
- September through October: Supervisors and employees discuss performance for the past review period.

A more detailed timetable is available on-line. Employees and supervisors can download revised forms from the LSS website. The LSS Training and Development Department offers training courses in the writing of accomplishment reports, goal setting and the performance review conversation. If you have any questions regarding training, please call Barb Brooks at x5021. If you have questions about the review process, contact Kay Van Vreede at x3396 or Cindy Crego at x3278.

Christos Leonidopoulos of Columbia University has been examining B mixing in DZero.

result is Delta M_d = 0.506 +/- 0.055(stat) +/- 0.049(syst) ps^{-1}, and is one of the more precise measurements made by experiments at Fermilab. (The number means that the meson oscillates more than 100 billion times in a second.) Our measurement gives us confidence we can make a similar measurement for the neutral B_s meson (containing a b-quark and a s-antiquark).

At present, the B_s meson can only be studied at Fermilab. Experimental as well as theoretical evidence indicates that the B_s meson oscillates about 30 times faster than the B_d, almost all B_s mesons will turn into anti-mesons in a fraction of a trillionth of a second. Measuring this parameter is of the utmost importance, since a deviation from predictions could point to some new force or interaction unexpectedly lurking around the corner.

Alan Jonckheere (right) and Fritz Bartlett are key contributors to the online and computing systems, which are used to collect and analyze the data for this and all other DZero results. (Click on photo for larger version.)

Result of the Week Archive

Accelerator Update

Fermilab Arts Series: Two-for-One Ticket Voucher with Savoy-Doucet Ticket Order

The Fermilab Arts Series has a special offer for patrons of this Saturday's concert. With your order of tickets for the July 10 show of the Savoy-Doucet Cajun Band, you will receive a two-for-one ticket voucher for the July 31 concert by Free Flight, featuring jazz flutist Jim Walker. If you've already purchased your tickets for Savoy-Doucet, feel free to phone (x2787) or stop by our box office located in the User's Office to pick up your voucher. Please note that the offer is per Savoy-Doucet ticket order, not per ticket.

The Savoy-Doucet Cajun Band plays honed-down, hard-core Cajun music with an earthy sensuality. The band includes Michael Doucet, who won a Grammy award with Beausoleil; Ann Savoy, who appeared in the film "Divine Secrets of the Ya Ya Sisterhood;" and Marc Savoy, who received the National Heritage Fellowship Award - the highest honor in the country for traditional artists. The band has traveled the world, appearing in many prestigious venues such as the Newport Folk Festival, the Berlin Jazz Festival, the Festival of American Fiddle Tunes at the Smithsonian, and Queen Elizabeth Hall in London.

Savoy Doucet Cajun Band performs in Ramsey Auditorium on Saturday, July 10 at 8 p.m. Tickets are $16 adults, $8 ages 18 and under. For tickets, call 630-840-2787 or stop by the box office from 9-4 (closed for lunch) located next to the User's Office in Wilson Hall.

July 5 - July 7

- During this 48 hour period Operations established one store that added to an existing store provided approximately 32 hours and 47 minutes of luminosity to the experiments.
- Linac beam suffered from LRF5 water problem
- Booster suffered from BRF12 problems
- Store 3621 set NEW LUMINOSITY RECORD with 92.1E30
- TeV store 3621 lost due to a quench

View the current accelerator update
View the Tevatron Luminosity Charts

Announcements

Fermilab Golf League Outing

The Fermilab Golf League is sponsoring a Golf Outing at the Tamarack Golf Club in Naperville next Friday, July 16, at 1:30 p.m. Everyone is welcome to play. There will be games and prizes for golfers of all skill levels. The cost is $59.95.
more information

Fermilab Rocket Club

The Fermilab Association if Rocketry is having its next monthly club launch on July 10, 2004 from noon until 4:00 p.m. The club plans to launch many big high power rockets. There will also be a raffle for a rare Estes Saturn V flying model rocket kit. Anyone can enter the raffle. The winner will be selected between 2:30 p.m. and 3:00 p.m.
more information

Dave Herzog's Marionette Show

The Fermilab Recreation Office presents the Dave Herzog Marionette Show, which will be held in the upper level of Kuhn Barn on July 16 at noon. For 28 years, Dave has performed thousands of shows

In the News

From the *Institute of Physics*, July 6, 2004

Physicists offer science communicators £1500 for Einstein Year

Today, the Institute of Physics announced its largest ever grant scheme, with individual cash awards of up to £1500 so that local science teachers, enthusiasts or organisations can hold an event or activity during Einstein Year (2005) that helps make physics interesting and relevant to the general public.

read more

for audiences nationwide. Dave is a frequent performer at Navy Pier. Not only does Dave perform but he also hand crafts all his marionettes. This event is open to all Fermilab employees, visitors and on-site contractors and their children. This event is free. All we ask is that you do not arrive late. If your spouse is coming from off-site you must notify security.